

Application Number 09/643,729
Amendment dated, April 12, 2004
Reply to Office action of December 1, 2003

Amendments to the Specification:

Please replace paragraph 3 of Page 1 with the following amended paragraph:

B1 The present invention relates to wireless data communications with header suppression and reconstruction, and in particular to a network gateway and a wireless terminal ~~communications~~ communications manager. More precisely, this invention describes a TCP/IP wireless gateway for enabling mobile users to have its own IP address.

Please replace paragraph 5 of Page 1 with the following amended paragraph:

B2 No one can anymore doubt about the increase of wireless communications between individuals. Meanwhile, if a lot of work has been done in the field of cellular communications, lots remains to be done in wireless communications involving data. In fact, it is important for a mobile user to be able to wireless communicate using his computer and a cellular phone for instance. Several solutions exists already. Meanwhile, they suffer from various limitations.

Please replace paragraph 1 of Page 11 with the following amended paragraph:

B3 IP/WIRELESS, WIRELESS/IP translator 23. A new TCP/IP header is created using this TCP/IP information and the data field contained in the radio packet. This new TCP/IP data packet is sent to the router 22 using path 35. The router routes the packet according to flexible policies determined by a user. If the packet destination is outside the wireless network i.e. in the network 19, the router checks whether the destination IP address is allowed. If so, the TCP/IP packet is sent to the network 19 using the link 33. If the packet destination is inside the wireless network, the router 22 checks in the database 24, by making a request using path 38, if the user IP exists. Furthermore, in another embodiment, the router 22 checks if the destination user, in the case that the destination user is connected, allows the source user to reach him. A way to implement that would be for instance to add a field in the database next to the destination IP address which would contains either banned addresses or authorized addresses. In the case that the destination user is a mobile unit part

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of the wireless network, the packet is sent to the IP/WIRELESS, WIRELESS/IP translator 23 for further processing.

Please replace paragraph 2 of Page 13 with the following amended paragraph:

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In the preferred embodiment, the transmission of the data packets sent over the wireless network is managed by the IP/WIRELESS, WIRELESS/IP translator 23 on the gateway side and the IP/WIRELESS, WIRELESS/IP translator 29 on the mobile user side. The IP/WIRELESS, WIRELESS/IP translator 23 and the IP/WIRELESS, WIRELESS/IP translator 29 check the transmission of the wireless packets over the wireless network. They command their respective radio transceiver in order to synchronize communication, send acknowledgements, request reception acknowledgements in the case that the acknowledgements are not received, save wireless packets if they cannot be immediately sent.

Please replace paragraph 3 of Page 13 with the following amended paragraph:

Fig. 5 summarizes the action performed by the WIRELESS/IP, IP/WIRELESS translator 23 when receiving a wireless packet, in the preferred embodiment. Fig 6 summarizes the operation performed by the WIRELESS/IP, IP/WIRELESS translator 29 when receiving a TCP/IP packet.

Please insert the following paragraph after paragraph 3 of Page 15:

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Now referring to Fig. 4, there is shown examples of the format of the packet that may be transferred. For example, a data portion 110 is shown. A TCP/IP packet comprising a TCP/IP header 111 and the data portion 110 is shown. A corresponding wireless packet having a wireless header 112 is also shown. The wireless header comprises a compressed data portion 113. Another wireless packet having a data portion 100 and the wireless header 112 is shown. Alternatively, a wireless packet having the wireless header 112 and a portion 114 is also shown. Such embodiments shows that the data portion 110 may be compressed, in a wireless packet, left without any changes or encrypted as explained.

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Please replace paragraph 4 of Page 15 with the following amended paragraph:

When a data packet comes from the NDIS 63 to the miniport NDIS 64 using data path 81, it is automatically stored into the buffer 65. The second thread 67 of the executable application 73 is then warned that a data packet is ready to be processed and gets the data packet from the driver part 66 of the network manager 72 using path 88 and save it to buffer 68. The second thread 67 then sends a message to the main thread 69. The main thread 69 collects the data packet from buffer 68 of the network manager 72. The main thread 69 transforms the data packet into a format suitable for the data radio system 71. In another embodiment, the main thread 69 encrypts the data part of the TCP/IP packet for security and/or authentication purposes. In another embodiment, the main thread 69 compresses the data part of the TCP/IP packet. When the TCP/IP is entirely processed, the new packet is sent to the interface 70. The interface 70 then sends the information to the radio system 71.

Kindly replace the abstract on file (Page 22) with the following amended abstract

A gateway for a wireless network. The gateway allows any wireless device to communicate using the Internet Protocol. The radio gateway works as an agent between the NDIS layer and the wireless network. The gateway removes the TCP/IP header and adds its own header.